ABSTRACT

A broad-band light source using a semiconductor optical amplifier is provided. The broad-band light source includes the semiconductor optical amplifier including an active layer serving as a gain area, an under-cladding layer, an over-cladding layer, and antireflection layers formed at both ends of the active layer; and a reflector, located at the outside of the semiconductor optical amplifier, for reflecting light outputted from the semiconductor optical amplifier so that the reflected light is inputted back to the active layer so as to minimize gain ripple of the semiconductor optical amplifier.